CALIFORNIA ENERGY COMMISSION
1516 NINTH STREET
SACRAMENTO, CA 95814-5112

January 22, 2009

DOCKET	
07-AFC-6	
DATE	JAN 22 2009
RECD.	JAN 22 2009

Tim Hemig
Director, Environmental & New Business
NRG Energy, Inc.
1817 Aston Avenue, Suite 104
Carlsbad, CA 92008

Dear Mr. Hemig:

CARLSBAD ENERGY CENTER PROJECT (07-AFC-6) AIR QUALITY DATA REQUEST SET 4

Attached are Data Requests 142-158, which will be docketed as Data Request Set 4 for the Carlsbad Energy Center Project (CECP) proceeding. These data requests are made pursuant to Title 20, section 1716(c) of the California Code of Regulations.

The following air quality data requests are issued in order for staff to more fully appreciate and understand potential CECP air emission conditions based on analysis conducted by the San Diego Air Pollution Control District (District). Specifically, staff seeks to follow-up on comments made by the applicant in its January 5, 2009 letter on the District's Preliminary Determination of Compliance (PDOC). As you remember, staff indicated that clarifications (embodied in this data request set) may become necessary during the Preliminary Staff Assessment Workshop's air quality discussion held at the Carlsbad Sheraton on the evening of January 7, 2009.

Regulations allow 30 days for written responses to the enclosed data requests (meaning all data responses would be due to the Energy Commission staff on or before February 23, 2009). If you are unable to provide the information requested, need additional time, or object to providing the requested information in the manner discussed above, please send a written notice to the Committee and me within 20 days of receipt of this notice. The notification must contain the reasons for the inability to provide the information or the grounds for any objections (see Title 20, California Code of Regulations, section 1716 (f)). As always, if you have any questions, please call me at (916) 654-4894, or email me at mike.monasmith@energy.state.ca.us.

Sincerely,

Mike Monasmith
Siting Project Manager

Enclosure

cc: POS

Technical Area: Air Quality
Author: William Walters and Keith Golden

Based on the San Diego Air Pollution Control District's Preliminary Determination of Compliance (PDOC) and Carlsbad Energy Center LLC's (applicant's) subsequent January 5, 2009 comment letter, a number of operational scenarios were proposed that were not previously explained fully in the Application for Certification (AFC), subsequent data responses, or in the Project Enhancement and Refinement (PEAR) document. Staff needs additional information on these operational scenarios, including: what circumstances would require specific permit conditions that address these operational scenarios; the emission limits necessary and the duration scenarios.

BACKGROUND: INITIAL COMMISSIONING AND SHAKEDOWN

In the AFC, Carlsbad Energy Center, LLC (applicant) described a Commissioning period of 49 days for each turbine, and amended that to approximately 60 days for each turbine in the PEAR document. Yet, the PDOC allows for a Commissioning period of 120 days per turbine. In addition, the PDOC includes an additional 60 day period after Commissioning and before commercial operation called Shakedown, which had previously not been addressed in the AFC. Staff needs clarification as to the changes to the Commissioning period for the project.

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142. Please describe whether the applicant requested the additional time for the Commissioning and Shakedown periods per new data/information from the turbine manufacturer (Siemens-Westinghouse), or if other relevant information resulted in the additional 60 days in the time period necessary for the Commissioning period for each turbine.

143. If the additional Shakedown period was requested by the applicant, then please provide a description of this Shakedown period and how it differs from Commissioning. Describe why it is necessary to have this additional period known as Shakedown before the project is deeming commercially operational.

144. Please identify whether the applicant would be willing to stipulate to the Commissioning period, without the additional Shakedown period, as identified in the PEAR document, or some other period(s) for one or both that are shorter than currently allowed in the PDOC.

BACKGROUND: TUNING

The PDOC defines tuning (Condition 13) as "adjustments to the combustion or emission control system that involves operating the combustion turbine or emission control system in a manner such that the emissions control equipment may not be fully effective or operational." Staff needs clarifications as to what specific "adjustments to the combustion or emission control systems" will occur, why they will occur, and how often they will occur.

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145. Please describe why and what "adjustments" will be made to the combustor cans and/or the Selective Catalytic Reduction system.

146. Please describe the frequency these adjustments will be made and whether they would occur at the time of the typical annual maintenance period.

147. Please define the NOx and CO emission concentrations and hourly emission rate (lb/hr) that are necessary during a tuning event. Please describe the turbine loading and operation of emission control systems during a tuning event. Also quantify the number of hours annually that the Combustion Turbine Generator (CTG) would be undergoing tuning and be subject to the higher emission limits.

BACKGROUND: TRANSIENT LOAD CHANGE

Condition 15 of the PDOC defines a transient load change when the combustion turbine exceeds 50 MW per minute change. Subsequently, applicant's January 5, 2009 comment letter states that at load changes as low as 5 MW per minute the NOx BACT levels of 2.0 ppm cannot be met. This would imply that at only times when the project is not subject to load changes could the turbine meet the 2.0 ppm limit. The applicant is requesting (through its January 5, 2009 comment letter) for 15 hours per year per turbine cumulatively for all qualifying conditions to exclude the 2.0 ppm hourly emission concentration limit and replace it with a 12 ppm hourly concentration limit. Staff needs clarification of the various operational scenarios discussed in the applicant's January 5, 2009 comment letter to fully understand what those scenarios are, how they would be known to occur, and their justification.

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148. Please confirm that applicant's proposed condition XX from its January 5, 2009 PDOC comment letter (which describes four qualifying events/conditions for equipment operation), is meant to cover all transient load events where NOx emission exceptions are sought; and please revise the requested change so that it makes this point clear. In addition, please clarify that this qualifying event language is only for NOx, and is not being requested for any other pollutant, such as CO and VOC.

149. Please discuss why the applicant would bid their project to meet either California ISO or SDG&E resource needs, when the project appears incompatible with the ramp rates required by the bid specifications. Please include in this discussion if changes could be made to the project to allow it to meet all the bid specifications.

150. Should the project be excluded from bidding on certain resource bids, or should the project be bundled with other generation resources (such as a simple-cycle peaker) to ensure all bid specifications can be met within the permit limits?

151. Please discuss when the California ISO would initiate the operation of the project under Automatic Generation Control. Include in this discussion how the California ISO would achieve control of the project and what is meant by Automatic Generation Control.

152. Please provide historical circumstances within the last three years where the California ISO has initiated control of a power plant under Automatic Generation Control. Please provide the documentation from the California ISO that such Automatic Generation Control events occurred.

153. The January 5, 2009 letter requested that the 2 ppm NOx limit not apply during, "Rapid gas turbine load changes due to activation of a plant automatic safety or equipment protection system which rapidly decreases turbine load." Please discuss why it is not sufficient to rely on the District Rule 98 (Breakdown Conditions: Emergency Variance) instead of trying to formulate a permit condition that appears to cover a breakdown circumstance.

154. Please discuss why the initiation and shutdown of the inlet air cooler would adversely affect complying with the 2 ppm NOx concentration. Please provide substantiation that a Siemens Rapid Response SCC6-5000F turbine unit with an evaporative inlet air cooler needs an exemption from the 2 ppm NOx concentration.

155. Please define the NOx and CO emission concentrations that are anticipated during the initiation and shutdown of the evaporative inlet air cooler. Also quantify the number of annual operation hours for this scenario.

156. The applicant requests in its January 5, 2009 PDOC comment letter the following language exempting the 2 ppm NOx concentration be added to the permit conditions: "Events as the result of technological limitation identified by the operator and approved in writing by the District." This language appears to be overly broad and open-ended. Please clarify the intent of this language and the technical reasons and "technological limitations" that could arise that would be included under this exemption.

157. Please estimate the maximum hourly NOx emissions associated with the 12 ppm concentration requested for the qualified transient load events and confirm that, assuming both turbines are concurrently operating under the 12 ppm limit, that these emissions do not result in the potential for impacts greater than those already modeled and analyzed for worst-case 1-hour NOx emission events.

BACKGROUND: Permit Applicability Determination (PSD)

The San Diego County Air Pollution Control District's (District) Preliminary Determination of Compliance (PDOC) finding for PSD permit applicability was based on the District's interpretation of their own regulations rather than a strict interpretation of U.S.EPA PSD applicability emission calculation requirements. Since the District is not currently delegated PSD permitting authority from the U.S.EPA, and the applicant has not formally requested a PSD permit applicability finding from U.S.EPA staff is concerned about the validity of the PSD permit applicability finding. Staff needs the applicant to provide a PSD applicability analysis, based on Federal PSD statute requirements, in order to accurately assess the PSD permit applicability and complete the Laws, Ordinances, Regulations, and Statutes (LORS) findings for this project.

It is staff's belief through conversations with U.S.EPA staff that the pertinent section in the PSD regulation is 40 CFR Part 52.21 (b)(48)(i), which specifies the requirements for determining baseline actual emissions from existing electric utility steam generating units, including requirements for non-compliant operations and multiple emission units. The specific issues most relevant to the assessment for the proposed project are the fact that the baseline must be based on the average annual emissions for a 24-month consecutive period that is the same for all of the multiple units, although not necessarily the same 24-month period for each pollutant, and that the 24-month period must be within 5 years immediately preceding the actual construction date. Since the project may not begin construction until sometime during 2009, it appears that would limit the period to the maximum 24-month emission period from no earlier than 2004 through the present.

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158. Please provide, according to federal PSD statute requirements for the actual emission baseline calculations for power plants, the applicant's PSD permit applicability assessment for both NO_2 and PM10 emissions. Please note that staff will likely request that U.S.EPA review this assessment for concurrence.